Concept of the trophic level

A *trophic level* refers to the organism's position in the food chain. The word *trophic* derives from the Greek word meaning to food (or feeding). It is simply a *feeding level*, as often represented in a food chain. Producers comprise the first trophic level, followed by the *primary consumer* (herbivores), then secondary consumers (carnivores feeding on herbivores) and so on.

It is important to note that many animals do not specialize in their diets which feed at more than one trophic level. *Omnivores* (such as humans) eat both animals and plants. Further, except for some specialists, most carnivores don't limit their diet to organisms of only one trophic level. Frogs, for instance, don't discriminate between herbivorous and carnivorous bugs in their diet. If it's the right size, and moving at the right distance, chances are the frog will eat it. It's not as if the frog has brain cells to waste wondering if it's going to mess up the food chain by being a secondary consumer one minute and a quaternary consumer the next. *The number of trophic levels also varies in different ecosystems. Generally, its number is more in aquatic ecosystems than in terrestrial ecosystems*.

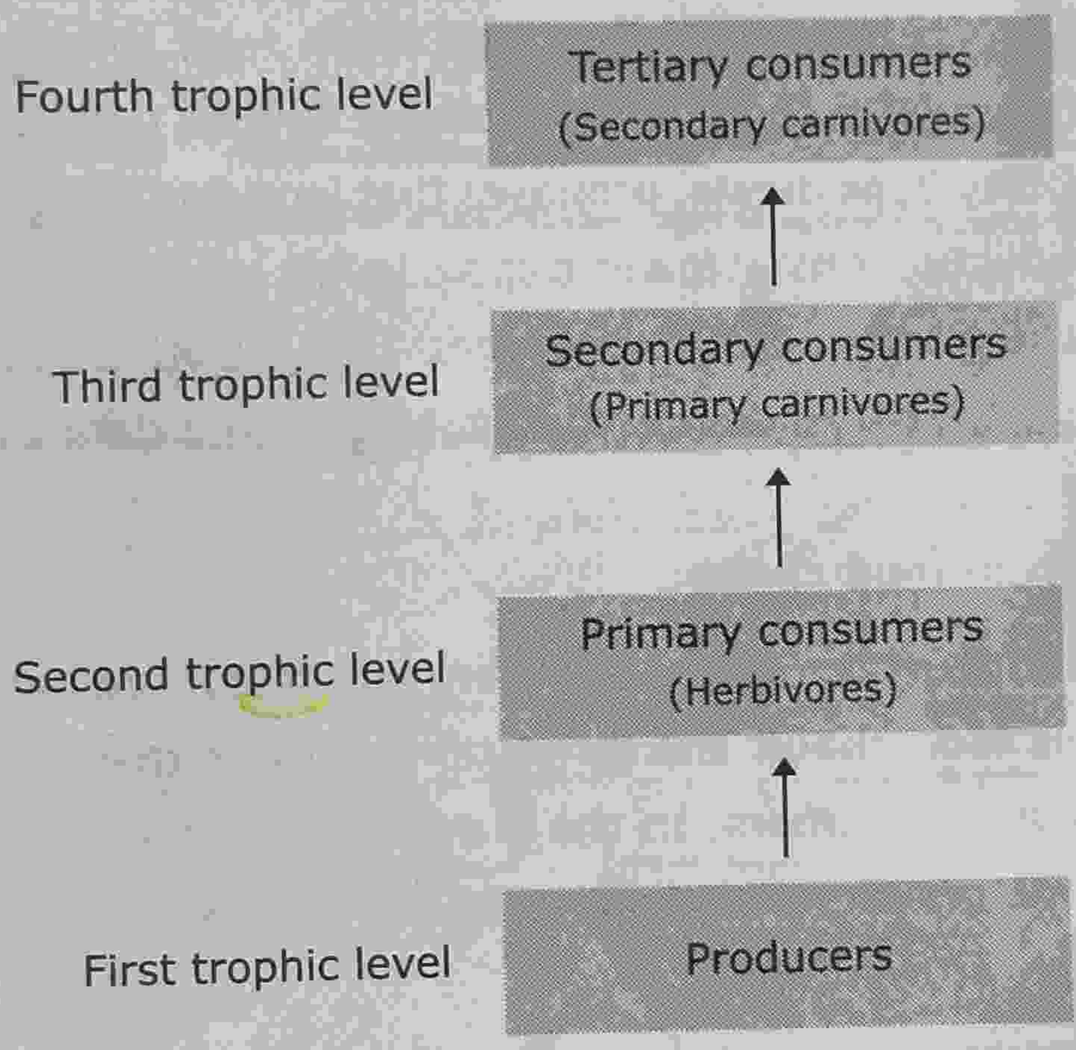

Figure 2.5 Flow of food energy through different trophic levels. First level (the producer trophic level), herbivores occupy the second level (the primary consumer trophic level), primary carnivores occupy the third level (the secondary consumer trophic level), and secondary carnivores occupy the fourth level (the tertiary consumer trophic level).

Table 2.2 Trophic levels and physiological roles in the community

Type of organisms	*Trophic role*	*Trophic level*	*Physiological classification*
Green plants	Producers	First	Autotrophs
Herbivores	Consumers	Second	Heterotrophs
Carnivores	Consumers	Third and higher	Heterotrophs